

## Willow Lane Lancaster: An experiment in Eco-renovation.

This ex-Council House has been renovated to take account of a range of environmental considerations; in particular energy efficiency, waste minimisation and the sustainable production of materials.

As an ENTIRELY self-financed project and an experiment in commercial viability we have not been able to do as much research or experimentation as we would have liked and as such do not consider it the last word in eco-renovation. So far we appear to be very close to our targeted costing but would concede that a rising market has helped with that! A falling market could have had disastrous results for us... *One of us re-mortgaged their house to make this happen...*

Another problem was lack of information - which makes it hard to arrive at confident decisions on some interventions. Suppliers made claims that could not be verified and promises of availability that failed to transpire. Geography plays a role in this as delivery is an important consideration.. is it 'eco-friendly' if we drive 100 miles to collect it?

Ten people contributed between 5 and 500 hours of labour each. As it is a profit share, we will discover our hourly rate – which will be the same for each person – when we sell the house.

We hope you pick up some useful ideas from looking around and if you wish to take away a copy of this leaflet please do... *but only if you really need it.*

### **The following applies throughout the house...**

12. Paint – unless stated otherwise – Is based on harmless ingredients such as soya oil and citrus oils to avoid petrochemical based 'conventional' paint. It is expensive but as a small proportion of total spend was easily absorbed. *Drying times are long and this was a problem*
13. Wiring not replaced except where necessary and re-assigned existing wiring as required. Steel fittings used rather than PVC if replacement necessary.
14. Low-energy light bulbs fitted
15. Retained and refurbished interior doors, hinges, catches
16. Retained existing 20/30 year old aluminium secondary glazing
17. Installed pelmets (made from 0% formaldehyde MDF) which are generously wide to allow in more natural light which in combination with radiator shelves (and thick curtains) prevent heat loss and 'draught' effect through convection at windows
18. Retained existing plumbing and fitted radiators with thermostatic valves
19. Recycled wallpaper *or retained existing wallpaper*
20. Repaired rather than re-plastered except in kitchen – see 'example one' below for case where this was wrongly judged..
21. As an economy measure, house was built with roof-line cutting through whole top floor on three sides. These areas were not insulated and serious condensation problems had occurred. We hope to have cured this by 'dry-lining' and insulating with sheep's wool. It is longer lasting than glass fibre, breathable when required and helps Cumbrian farmers diversify

If anything is unclear please ask and do feel free to challenge *any* assertion made. We have not made reference to the minimal 'non-green' but concede it is there.

### **.....and these points are specific to each room:**

#### **Exterior**

22. Front gate, side gate, shed door refurbished with paint from 'Furniture Matters' who collect and redistribute half used paint.
2. 'Breathable', low pollution paint on exterior walls – based on minerals (silicate) rather than petrochemicals
3. Retained and refurbished 4 out of 6 windows – other 2 re-used in porch

4. Added porch for extra space and heat retention whilst entering/leaving house – ‘Segal’ self-build method has low embodied energy and requires no special skills.  
*Used:* green oak frame main members; cement fibreboard exterior panels; re-cycled downspout; re-cycled brick from 70’s fire surround in lounge as base; front door and furniture rescued from UPVC re-fit down road; lock found on ‘swap shop’ (local internet based 2<sup>nd</sup> hand exchange); used off-cuts for skirting board; eco-paint interior; re-used & re-sited old flags; reclaimed slates; previously mentioned window frames with trad. Linseed putty; space for two recycling boxes and possibly bicycle on wall hook
5. Water butt and diverter to collect rain water – standing on base made from above mentioned bricks
6. Refurbished existing front door, furnishings, draught strips and brush
7. Re-used old bolts to attach (new) sacrificial end-piece to side gate
8. Soil pipe and rear down spout painted with re-used paint (Furniture Matters)
9. Both kitchen windows replaced. Well designed detailing; selected timber; dry glaze system; 16mm gas filled void; low-emissivity glass
10. Mineral injection insulated cavity
11. Double glazed back door; reinforced/insulated lower panel; re-used hinges; retained draught strips and brush
- 11a. Large compost bin – available free from Lancashire County Council

#### **Kitchen**

- 11b. Small compost bin – for transfer outside
23. Replaced unserviceable boiler with condensing gas boiler – more than 90% efficient as opposed to typical 75% for common new boiler
13. Solid, strong, serviceable design and construction of units- re-used carcass on wall unit; laminated beech tops which come with (as yet unverified) green credentials; all wax-oil treated
14. Re-used stainless steel sink and taps
15. Recycled rubber flooring

#### **Lounge**

24. Catalytic convertor gas fire – flueless and 100% efficient

#### **Hall/Stairs/Landing**

25. Re-fitted previous owners carpet and underlay for short term
26. Fitted air dryer (Sheila Maid) to take advantage of rising warm air in stairwell
27. Velux window fitted to maximise available natural light
28. Re-fitted existing threshold strips

#### **Loft**

29. 220mm of Warmcell (treated recycled newspaper) on to existing 80mm glass fibre
30. Tank lagged

#### **Front Bedroom**

31. Re-used shelving in cupboard

#### **Back Bedroom**

32. Re-used salvaged carpet and off-cuts of underlay which would otherwise have been thrown away (landfill)

#### **Bathroom**

33. Fit cylinder for solar system (old boiler was ‘instant’ supply) ‘tall’ design aids separation of hot/cold water
34. Solar controls/monitoring in airing cupboard
35. Retain existing suite and insulate under bath
36. Shower fed off solar system (with immersion/gas back-up)
37. Recycled rubber and cork mix flooring
38. Recycled floor tiles for window sill
39. Retain existing shower screen

## Roof

40. Thermal solar panels for water heating – ie. *not* photo-voltaic

## Thinking Green – Acting Green

What we have been exploring, in effect, is the difference between *economic* cost and *environmental* cost: attempting to balance the two in a realistic manner. This is not a project skewed by funding *and happened in the real world..* There is a perception that environmental protection – or sustainability – is expensive... which is justified to some extent as many ‘eco’ products are expensive - but the reasons for this are complex; often due to small scale production and other economic factors too complex to go into here. The common approach to renovation – especially when carried out for re-sale by a commercial operation (as opposed to a homeowner/DIY job) is to rip out everything that is at all damaged or worn and replace. This has benefits of simplicity but is mainly done because materials are cheaper than labour as well as more predictable... We were proceeding on the basis that labour is *greener* – and trying to discover to what extent this approach would remain economically viable.

Here are two specific examples to illustrate this thinking:

### Example One

#### Front bedroom, interior wall

Evidently quite damaged we nevertheless decided to repair as it would obviously use less materials and time. *But..* the wallpaper (when painted) pulled off a little plaster on the seams and could not be made to ‘lie down’ again. First attempt to solve involved thin strips of wood: glued, nailed and painted. The uneven surface made it look awful. Second attempt involved cutting thin strips of recycled lining paper, pasting on and repainting whole wall. So..

Cost of re-plastering: Financial: £52

Environmental: Plaster only

Cost of NOT re-plastering: Financial: £90

Environmental: Repair plaster, wood strips (went for firewood), extra paint, paste, glue and nails.

Conclusion: Should have re-plastered....

### Example Two

#### Lock on porch door

Needed a lock that would fit existing hole in door. Had old lock lying around but chose to use the one from ‘Swap Shop’ (local Internet 2<sup>nd</sup> hand exchange scheme) as it had three keys with it and appeared to be fully working. Once fitted, the ‘snick’ wouldn’t work to hold it in the unlocked position... possible reason addressed but still no go... had to swap for other lock which then didn’t fit striker plate so had to change that – both involved more wood being removed. Now working fine.

Cost of using new lock Financial: £28

Environmental: New lock, packaging.

Cost of re-using old lock Financial: £15

Environmental: Nil

Conclusion: Obvious saving in both financial and environmental terms  
(Costing assumes petrol use to be similar in both examples)

These two examples may seem fairly trivial in isolation but it is by applying this thinking throughout the house that will inform the choices you make. It’s not rocket science by any means but simply illustrates that sometimes it is better both financially *and* environmentally to go the ‘conventional’ route. We would urge though that when the financial balance is close or even slightly against the green approach it is then important to examine your conscience and favour the environment over your pocket every time.

## Useful Contacts:

### **Suppliers of Cumbrian Sheep's Wool Insulation**

*Second Nature Uk Limited, Soulands Gate, Soulby, Dacre, Penrith, Cumbria CA11 0JF*

**01768 486285**

[info@secondnatureuk.com](mailto:info@secondnatureuk.com)

[www.secondnatureuk.com](http://www.secondnatureuk.com)

SEDBUK

Independent information on efficiency of central heating boilers

[www.sedbuk.com](http://www.sedbuk.com)

Solar Sense

**Suppliers of DIY solar water heating systems**

Sandy Lane

Pennard

Swansea

SA3 2EN

01845 458 3141

West Yorkshire Solar Club

**Nearest training on DIY solar water installations**

Hebden Bridge Alternative Technology Centre

Hebble End

Hebden Bridge

HX7 6HJ

01422 842121

T I Askew's Saw Mill

**Supplier of British softwood**

Mount Pleasant

Tosside

SKIPTON

Equigas

**Ethical gas supplier**

FREEPOST SCE 8994

Oxford

OX1 2YP

020 8681 6429

[www.ebico.co.uk](http://www.ebico.co.uk)

Unit[e]

Electricity supply company dealing only in renewables

16 Avon Reach

Monkton Hill

Cippenham

Wiltshire

SN15 1EE

01249 705550

The Phone Co-op

**Ethical telephone company**

Lancaster Green Party Affinity Scheme

55 Grasmere Road

Lancaster

LA1 3HB

0845 458 3839

Altham Hardwood Centre

**Suppliers of English green oak**

Altham Corn Mill  
Burnley Road  
Altham  
ACCRINGTON  
BB5 5UP  
01282 771618

Focal Point Fires

**Suppliers of 100% efficient gas fires**

Avon Trading Park  
Christchurch  
Dorset  
BH23 2BT  
01202 499 330  
[www.focalpointfires.co.uk](http://www.focalpointfires.co.uk)

The Green Building Store

**Suppliers of Ecoplus Windows, Biofa and OS Colour paints, Warmcell loft insulation and other products.**

11, Huddersfield Road, Meltham  
Holmfirth  
HD9 4NJ  
01484 854898  
[www.greenbuildingstore.co.uk](http://www.greenbuildingstore.co.uk)

The Green Shop

*Suppliers of Green Paint and other products*  
Cheltenham Road, Bisley  
STROUD, GL6 7BX  
01452 770629  
[www.greenshop.co.uk](http://www.greenshop.co.uk)

Mike Wye Associates

Suppliers of ecological building products, including silicate masonry paints  
*Buckland Filleigh Sawmills*  
*Buckland Filleigh, Beaworthy*  
*Devon, EX21 5RN*  
*01409 281644*  
[www.mikewye.co.uk](http://www.mikewye.co.uk)

The Natural Coatings Company

**Suppliers of recycled flooring products**

Unit 5A, Tonedale Industrial Estate  
Milverton Road, Wellington  
Somerset, TA21 0AN  
01823 666710  
[www.flooring-services.com](http://www.flooring-services.com)

Roof Rite

**Suppliers of reclaimed states and timber**

Scotland Road  
CARNFORTH  
LA5 9RE  
01524 736199